Prepared for:

LCP SITE STEERING COMMITTEE

REVISED SUPPLEMENTAL SITE CHARACTERIZATION WORK PLAN FOR OPERABLE UNIT 2: CELL BUILDING AREA SURFACE SOIL

LCP CHEMICALS SITE BRUNSWICK, GEORGIA

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Acronyms and Abbreviations

AOC	Administrative Order of Consent
ARCO	Atlantic Richfield Company
CBA	Cell Building Area
CBASI	Cell Building Area Subsurface Investigation
COPC	Constituents of Potential Concern
EPA	U.S. Environmental Protection Agency
HHBRA	Human Health Baseline Risk Assessment
ft	Feet
ft-bgs	Feet below ground surface
Montrose	Montrose Environmental Solutions
MS/MSD	Matrix spike/matrix spike duplicate
OU	Operable Unit
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated biphenyl
QA/QC	Quality assurance/quality control
QAPP	Quality Assurance Project Plan
RI/FS	Remedial Investigation and Feasibility Study
RP	Responsible Party
Site	LCP Chemicals Superfund Site
SOP	Standard Operating Procedure
TAL	Target Analyte List
VOC	Volatile Organic Compound

1 INTRODUCTION

Honeywell and the Atlantic Richfield Company (ARCO) are Responsible Parties (RPs) to an Administrative Order of Consent (AOC) EPA Docket No.: 95-17-C with the U.S. Environmental Protection Agency (EPA), to conduct a Remedial Investigation and Feasibility Study (RI/FS) for the LCP Chemicals Superfund Site (the "Site") located in Brunswick, Georgia (EPA,1995). The EPA is administering the Site as three Operable Units (OU): OU1 pertains to the salt marsh; OU2 pertains to site-wide groundwater and the footprint of the former mercury cell building area (CBA) (both soil and groundwater); and OU3 pertains to the upland soil excluding the CBA.

In October 2020, the RPs submitted a technical memorandum (herein referred to as the "OU2 HHRA Memo") presenting the initial elements in the development of the Human Health Baseline Risk Assessment (HHBRA) for OU2, namely the identification of Constituents of Potential Concern (COPCs) and the Exposure Assessment, which will form the basis for the computational risk assessment (EPS, 2020). EPA provided comment on the OU2 HHRA Memo[1] in a letter dated January 8, 2021, to which the RPs responded in a letter (with attachments) dated February 1, 2021. An ensuing dialogue between EPA and Environmental Planning Specialists, Inc. (dba: Montrose Environmental Solutions (Montrose)) resulted in the conclusion that a data gap exists regarding characterization of surficial soil (*i.e.*, the top 2 feet (ft) of the soil horizon) in the CBA due to the existence of a soil cover across most of the CBA. The placement of a soil cover over the entire CBA was completed during the 1994-1996 upland removal action to prevent direct exposure to the cell building slabs and to mitigate potential mercury vapor emission. This document provides the work scope for additional characterization of surface soil in the CBA where native soil may exist in the upper 2 ft of the soil horizon.

An overview of the prior investigations is provided in Section 2 of this work plan. Section 3 describes the proposed work scope to address the additional characterization, and Section 4 provides the anticipated work schedule.

A Supplemental Field Sampling Plan (EPS 2021a), Amended Quality Assurance Project Plan (EPS 2021b) are being submitted concurrent with and in support of this Work Plan. The work will be performed under the approved Health and Safety Plan for the CBA (EPS, 2018b), which has been amended to update personnel and contact information.

[1] A Revised HHBRA Memo was submitted in March 2021 and approved by the EPA in a letter dated June 24, 2021.

2 OVERVIEW OF THE WORK PERFORMED TO DATE IN THE CBA

Between 1994 and 1995, two investigations performed as part of the upland removal response action targeted shallow soil across the footprint of the CBA (prior to subsequent placement of the soil cover) including soil beneath the cell building concrete floor slabs. The initial investigation collected shallow soil with a hand auger, either in the soil adjacent to each cell building or beneath the building after coring through the concrete foundation slab. Soil samples were tested for metals, volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyl (PCB) Aroclors. In 1995, the soil study was expanded to include mechanical excavation (*i.e.*, test pits) in areas of interest to allow for a more thorough assessment of the sub-foundation soil condition. The test pit program included a visual assessment of the soil for metallic mercury and analytical testing for mercury, lead, VOCs, PAHs, and PCB Aroclors.

Additional characterization of the CBA was performed in 1996-1997 under the Cell Building Area Subsurface Investigation (CBASI) program. One element of the CBASI program comprised a deep soil assessment designed to characterize the nature and extent of metallic mercury in subsurface soils beneath the cell buildings and profile the underlying geologic subsurface. The deep soil assessment was performed at 14 locations: ten borings beneath Cell Building 1, one boring south of Cell Building 2, one boring at the mercury retort, and two borings in the caustic storage and adjoining rail area. These borings were advanced to the semi-confining layer (*i.e.*, the cemented sandstone). The assessment of liquid mercury was performed primarily through visual assessment (*i.e.*, presence of beads or pooled liquid mercury) but included laboratory testing for mercury.

The most recent CBA characterization occurred in 2018 and comprised of continuous soil coring to the base of the Satilla at 18 locations within the CBA and 1 location north of the CBA. Portions of each soil core were systematically sampled at a vertical interval of generally 4 ft for the purpose of quantifying the mercury concentration. Additional testing of subsurface soil across the CBA involved target analyte list (TAL) metals and PAHs, in accordance with the Site Characterization Work Plan for OU2 dated August 2018 (EPS, 2018a).

3 ADDITIONAL CHARACTERIZATION WORK SCOPE

3.1 Proposed Work Scope

Figure 1 depicts the proposed locations for additional surface soil characterization, which are positioned in the CBA risk evaluation area where the soil cover thickness is estimated at less than 2 ft. Refer to the HHBRA Technical Memorandum (EPS, 2021c) for more information about the soil cover thickness. The targeted sampling within areas with 2 ft or less soil cover material provides greater likelihood that sample collection, which is intended to characterize the 0 to 2 ft interval, includes a portion of native soil as opposed to the imported soil cover fill. Thus, the proposed locations are justifiably biased to areas with the thin soil cover.

Soil cores from 0 to 2 ft below ground surface (ft-bgs) will be collected using a hand auger according to the procedures outlined in Section 4.3 of Soil Sampling Operating Procedure (*LSASDPROC-300-R4*) developed by the EPA (EPA, 2020) and tested for VOCs (Method 8260C), PAHs (Method 8270D SIM), TAL metals (Method 6020), including mercury (Method 1631B), and PCB Aroclors (Method 8082A). Full field method details are provided in the *Supplemental Field Sampling Plan for Operable Unit 2: Cell Building Area Surface Soil* (EPS, 2021a).

Analytical testing will be performed by Eurofins Lancaster Laboratories Environmental LLC and Eurofins Frontier Global Sciences LLC for consistency with the 2018 CBA investigation. Laboratory accreditations (certifications) and standard operating procedures (SOPs) for testing and quality assurance/quality control (QA/QC) are provided in the amended Quality Assurance Project Plan (QAPP) (EPS, 2021b).

3.2 Quality Assurance/Quality Control

The amended QAPP (EPS, 2021b) provides the measures and standards for QA/QC. QA/QC samples will be collected to allow for evaluation of data quality. QA/QC samples will include blind duplicates, a trip blank (for VOCs), equipment blanks, and matrix spikes/matrix spike duplicates (MS/MSDs). One MS/MSDs sample and one blind duplicate will be collected per 10 soil samples consistent the *Field Sampling Quality Control (SESDPROC-011-R5)* (EPA, 2017). One trip blank for each shipping container containing VOC samples will be included. One equipment blank sample will be collected to verify the efficiency of the decontamination procedures.

A Stage 3 validation of all laboratory data will be performed. The data validation report will be reviewed to determine if any results should be excluded from the risk evaluation per the validator's recommendation.

4 SCHEDULE

The field investigation will commence as soon as practicable after EPA's approval of this Work Plan and supporting documents. Laboratory testing followed by an independent third-party data validation is expected to require up to 60 calendar days. The HHBRA will proceed on its own timeline and will be incorporated into the RI Report. Data obtained from execution of this Work Plan will be incorporated into the RI Report, if available, or otherwise into the subsequent FS Report.[2]

[2] Risk and hazard calculations will be updated at this time, incorporating the results of the of the additional CBA investigation.

5 REFERENCES

[EPS] Environmental Planning Specialists, Inc. (2018a). Site Characterization Work Plan for Operable Unit 2: Groundwater and Cell Building Area, LCP Chemicals Site. August.

EPS (2018b). Revision 1 Health and Safety Plan for Operable Unit 2: Cell Building Area Characterization, LCP Chemicals Site Operable Unit Two. July.

EPS (2020). Identification of Constituents of Potential Concern and Exposure Assessment, Human Health Baseline Risk Assessment Technical Memorandum, LCP Chemicals Site, Brunswick Georgia, OU2. October

EPS (2021a). Supplemental Field Sampling Plan for Operable Unit 2: Cell Building Area Surface Soil

EPS (2021b). Amendment #1: Quality Assurance Project Plan for Operable Unit 2: Cell Building Surface Soil. Revision 1. July.

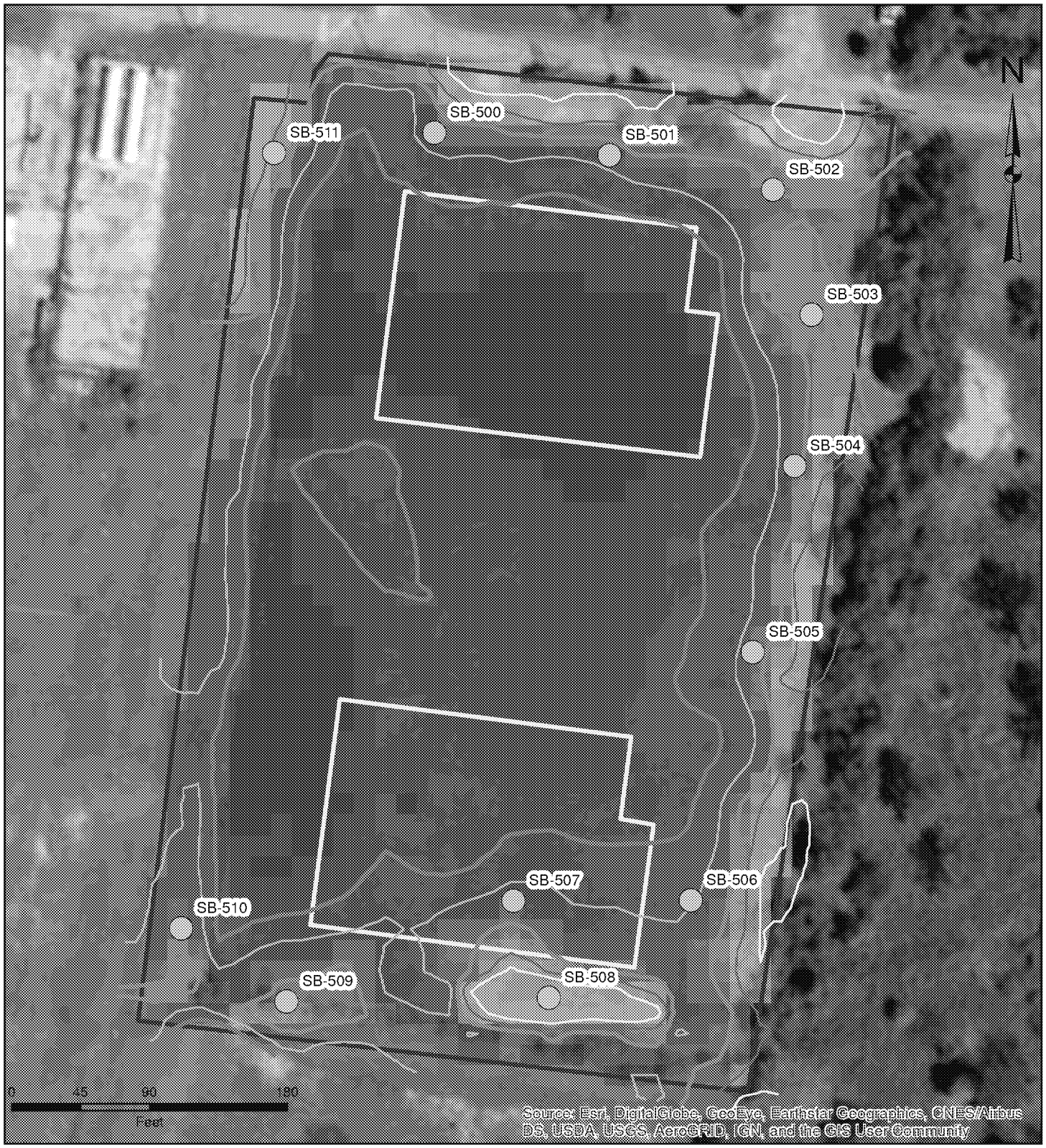
EPS (2021c). Revised Identification of Constituents of Potential Concern and Exposure Assessment Work Plan, Human Health Baseline Risk Assessment Technical Memorandum, LCP Chemicals Site Operable Unit Two. March.

EPA (1995). Administrative Order by Consent for Remedial Investigation/Feasibility Study. Docket N.95-17-C

EPA (2020). Soil Sampling *LSASDPROC-300-R4.* Dated June 11, 2020

EPA (2017). Field Sampling Quality Control *SESDPROC-011-R5.* Dated April 26, 2017

FIGURES



Proposed Sample Locations

Est. Soil Cover Thickness Contours

- 0
- 0.5 ft
- 1 ft
- 1.5 ft
- 2 ft

CBA Risk Evaluation Area

Cell Building Outlines

Estimated Soil Cover Thickness

- < 0.5 ft
- 0.5 - 0.75 ft
- 0.75 - 1 ft
- 1 - 1.25 ft
- 1.25 - 1.5 ft
- 1.5 - 1.75 ft
- 1.75 - 2 ft
- 2 - 2.25 ft
- 2.25 - 2.5 ft
- > 2.5 ft

Proposed Surface Soil Sample Locations
LCP Chemicals Site
Brunswick, GA

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Figure No. 1